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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,222

09/18/2006

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EXAMINER

HU, JENNIFER F

ART UNIT

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2821

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,222	<b>Applicant(s)</b> PINTOS ET AL.	
	<b>Examiner</b> JENNIFER F. HU	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2821

### **DETAILED ACTION**

1. Amendment A received on September 23, 2009 has been entered into the record.
2. Claims 1-9 are pending.

### ***Response to Arguments***

3. Applicant's arguments, filed September 23, 2009, with respect to the rejection(s) of claim(s) 1, 2, 5, 6, and 9 under 35 U.S.C. 102(b) and claims 3-4 and 7-8 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Fukusawa teaches amended subject matter wherein said radiating element has a planar shape, but does not teach said radiating element is substantially vertically arranged with respect to the conductive surface. Trowbridge teaches said radiating element is substantially vertically arranged with respect to the conductive surface, but does not teach said radiating element has a planar shape. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of McCoy (US 6,445,348).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2821

5. Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by McCoy (US 6,445,348).

6. As to claim 1, McCoy teaches a data transmission system comprising an antenna provided with at least a monopole radiating element (301, Fig. 3) mounted on a conductive earth plane (304, Fig. 3), wherein the radiating element is connected to the conductive surface of the earth plane via a mast (303, Fig. 3) located near an edge of said conductive surface (Fig. 11 shows the antenna arranged at the edge of a ground plane in keyboard 1103, col. 4, lines 23-32) and wherein said radiating element has a planar shape and is substantially vertically arranged with respect to the conductive surface of the earth plane.

7. As to claim 2, McCoy teaches the radiating element is connected to the conducting surface of the earth plane via a mast fastened to the radiating element at its point of excitation (303, Fig. 3), this point of excitation is off-centered with respect to the surface of the earth plane (Fig. 11).

8. As to claim 6, McCoy teaches the antenna is provided with a hollowed-out radiating element (gaps 307, 707 may be considered hollowed-out portions of radiating elements 301, 701).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2821

10. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy.

As to claim 4, McCoy teaches the system substantially as claimed as applied to claim 1 above, but does not explicitly teach means so that its reflection coefficient is less than -10 dB in the operating frequency band. However, it is well known in the art that the operating bandwidth of an antenna is defined where the reflection coefficient is less than -10 dB (page 45).

As to claim 8, McCoy does not explicitly teach means for receiving and decoding transmitted signals within the context of digital terrestrial television within the frequency band lying between 470 and 862 MHz. However, it is well known in the art that antennas may be scaled in size according to the desired operating frequency.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy in view of Su (*Finite Ground Plane Effects on Ultra Wideband Planar Monopole Antenna*, Microwave and Optical Technology Letters, IEEE 2004).

McCoy does not teach the earth plane has at least one of its dimensions, such as its length, width and/or its height, of the order of a multiple of  $\lambda/2$ , where  $\lambda$  is a wavelength used by the antenna. Su teaches a monopole antenna mounted vertically over a ground plane, wherein the dimension of the ground plane could be selected to be about one wavelength of the lower-edge frequency in order to achieve a maximum bandwidth (pg. 536, col. 2, first full paragraph). It would have been obvious to one of ordinary skill in the art to modify the antenna of McCoy by setting the dimensions of the ground plane to about one wavelength of the lower edge frequency (which is a multiple of  $\lambda/2$ ) in order to maximize the bandwidth as indicated by Su.

Art Unit: 2821

12. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy in view of Scheppman (previously presented). McCoy does not teach the earth plane of the antenna corresponds to one face of a digital terrestrial television decoder. However, it is common in the art that the housing of an electronic device form the ground plane of the antenna of the device, as taught by Scheppman (col. 4, lines 30-31). It would have been obvious to one of ordinary skill in the art that the conductive ground plane of McCoy could be modified to be an integral part of the housing of an electronic device, such as a digital terrestrial television decoder.

13. Claims 1, 2, 4, 5, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trowbridge in view of Yang (US 5,949,379).

As to claim 1, Trowbridge teaches a data transmission system comprising an antenna provided with at least a monopole radiating element (17, 18, Fig. 1) mounded on a conductive earth plane (9, Fig. 1), wherein the radiating element is connected to the conductive surface of the earth plane via a mast (19, 20, Fig. 3) located near an edge of said conductive surface, wherein said radiating element is substantially vertically arranged with respect to the conductive surface of the earth plane.

Trowbridge does not teach said radiating element has a planar shape. Yang teaches two embodiments of a monopole antenna device, one embodiment comprising a planar antenna (Figs. 3-8) and another embodiment comprising a rod shaped antenna (Figs. 9 and 10), the difference being that the rod shaped antenna is omnidirectional and the planar antenna is more directive. Yang indicates that the substitution of a rod shaped antenna for a planar antenna and vice versa is a simple substitution that would yield predictable results. It would have been obvious to one of ordinary skill in the art to modify the rod shaped antenna elements of Trowbridge with planar

Art Unit: 2821

elements, as taught by Yang. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

As to claim 2, Trowbridge teaches since the radiating element is connected to the conducting surface of the earth plane via a mast fastened to the radiating element at its point of excitation (27, 28, Fig. 2 and 3), this point of excitation is off-centered with respect to the surface of the earth plane (9, Fig. 3).

As to claim 4, Trowbridge in view of Yang teaches the system substantially as claimed as applied to claim 1 above, but does not explicitly teach means so that its reflection coefficient is less than -10 dB in the operating frequency band. However, it is well known in the art that the operating bandwidth of an antenna is defined where the reflection coefficient is less than -10 dB (page 45).

As to claim 5, Trowbridge teaches a first compact radiating element and a second compact radiating element (17, 18, Fig. 1) mounted on the same conductive earth plane via masts located on separate edges of said earth plane.

As to claim 8, Trowbridge does not explicitly teach means for receiving and decoding transmitted signals within the context of digital terrestrial television within the frequency band lying between 470 and 862 MHz. However, it is well known in the art that antennas may be scaled in size according to the desired operating frequency.

As to claim 9, Trowbridge teaches the antenna includes means for pivoting about a rotation mechanism with respect to the surface of the earth plane (col. 1, lines 7-23).

Art Unit: 2821

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER F. HU whose telephone number is (571) 270-3831. The examiner can normally be reached on Monday-Friday 9:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2821

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER F HU/  
Examiner, Art Unit 2821

/Douglas W Owens/  
Supervisory Patent Examiner, Art Unit 2821  
December 21, 2009